

WHAT IS CLAIMED IS:

1. A cellular phone comprising:

voice communication means for transmitting and
receiving data concerning voice communication and
5 carrying out voice communication;

information communication means for transmitting
and receiving data concerning information communication
and carrying out information communication, which is
different from voice communication and includes an
10 image;

first display means disposed in a phone main body,
for displaying the data concerning voice communication;

second display means for enlarging and displaying
details of the data concerning information
15 communication;

operation means, removably attached to the phone
main body, for inputting instructions including
characters; and

transmission/reception means for
20 transmitting/receiving information between the
operation means and the phone main body.

2. The cellular phone according to claim 1,
wherein the second display means comprises a display
section surface rotatably disposed in an attaching
25 section in the phone main body, and

further comprises structure means for containing
the second display means in the phone main body, when

the operation means is attached to the phone main body
and for rotating the display part surface to set the
second display means in a state position in which
the display is possible, when the operation means is
5 detached from the phone main body.

3. The cellular phone according to claim 2,
wherein the second display means comprises: a
projection display section disposed in the phone main
body; and a magnification reflective mirror section
10 which is rotatably disposed in the attaching section in
the phone main body and which is set in a state
opposite to the projection display section, and

the structure means folds and contains the
magnification reflective mirror section in the phone
15 main body, when the operation means is attached to
the phone main body, and sets the surface of the
magnification reflective mirror section into a state
position opposite to the projection display section,
when the operation means is detached from the phone
20 main body.

4. The cellular phone according to claim 2,
wherein the second display means comprises: a display
section; and a direct view type magnification optical
section disposed opposite to the display section, and
25 the structure means folds and contains the display
section and magnification optical section in the phone
main body, when the operation means is attached to the

phone main body, and sets a display surface of the display section and the surface of the magnification optical section in such a position that the surfaces form a predetermined angle from the surface of the phone main body and the display is possible, when the operation means is detached from the phone main body.

5 5. The cellular phone according to claim 1, wherein the second display means comprises: a display section; and a direct view type magnification optical section disposed opposite to the display section, and
10 the structure means contains the magnification optical section in the phone main body, when the operation means is attached to the phone main body, and sets the magnification optical section in a display
15 state position distant from the display surface of the display section by a predetermined interval, when the operation means is detached from the phone main body.

 6. The cellular phone according to claim 1, wherein the phone main body has a first attaching
20 position in which the operation means is attached onto a surface side of the phone main body, and a second attaching position in which the operation means is attached onto a rear surface side of the phone main body in a state detached from the phone main body.

25 7. The cellular phone according to claim 6, wherein the operation means includes two horizontal cursor arrow direction keys, and

further comprises:

means for detecting that the operation means has been attached to the second attaching position;

change processing means of a code allocation

5 function of the two horizontal cursor arrow direction keys of the operation means; and

code allocation change means for changing the code allocation function by a signal of the detection means to operate, when the operation means is attached to the
10 second attaching position.

8. The cellular phone according to claim 1, further comprising:

attaching detection means for detecting presence/absence of the attaching of the operation
15 means with respect to the phone main body;

function key means for associating and allocating input keys of the operation means with respect to a plurality of different function operations; and

selection means for switching an allocation to
20 a function input key allocation from a text input key allocation by a signal of the attaching detection means.

9. The cellular phone according to claim 1, further comprising:

25 attaching/detaching detection means for detecting presence/absence of the attaching/detaching of the operation means with respect to the phone main body;

and

switch means for switching display driving of the first and second display means based on a signal of the attaching/detaching detection means.

5 10. The cellular phone according to claim 1, further comprising:

attaching/detaching detection means for detecting presence/absence of the attaching/detaching of the operation means with respect to the phone main body;

10 and

means for starting or ending a communication procedure process of the information communication means based on a signal of the attaching/detaching detection means.

15 11. The cellular phone according to claim 1, further comprising:

text conversion means for transferring character data key-inputted in the operation means to the phone main body from the operation means and subsequently
20 converting the data to a text; and

sentence edition recording means including both a temporary memory in which only a part is recorded at a sentence input time and an all sentence memory in which all sentences are recorded,

25 wherein the first display means displays the data of the temporary memory, and the second display means simultaneously displays the data of the all sentence

memory.

12. The cellular phone according to claim 1,
the transmission/reception means comprises:

radio wave intensity detection means for detecting
5 intensity of a signal transmitted from the operation
means;

critical radio wave intensity indication means
for indicating a predetermined critical radio wave
intensity;

10 radio wave intensity comparison means for
comparing an intensity of an output signal from the
radio wave intensity detection means with that of the
output signal of the critical radio wave intensity
indication means; and

15 warning means for issuing a warning, when the
intensity of the output signal from the radio wave
intensity detection means is lower than that of the
output signal from the critical radio wave intensity
indication means in the radio wave intensity comparison
20 means.

13. The cellular phone according to claim 1, the
operation means comprises: capacitance use input means
for performing an instruction operation for the second
display means on a rear surface side of an operation
25 surface; and conversion means for converting the a
signal of the capacitance use input means into a signal
to be transferred, and

the phone main body comprises: instruction
operation processing means for transferring the signal
to be transferred converted by the conversion means
by the transmission/reception means to perform an
5 instruction operation process of the second display
means.

14. The cellular phone according to claim 1,
wherein the operation means comprises: cross operation
key means for performing an instruction operation of
10 the second display means on a rear surface side of an
operation surface of the operation means; and
conversion means for converting a signal outputted from
the cross operation key means into a signal to be
transferred, and

15 the phone main body comprises: instruction
operation processing means for transferring the signal
to be transferred converted by the conversion means
by the transmission/reception means to perform an
instruction operation process of the second display
20 means.

15. The cellular phone according to claim 1,
wherein the operation means comprises: pattern code
reader means for reading a binary pattern code; and
conversion means for converting read signal information
25 read by the pattern code reader means into a signal to
be transferred, and

the phone main body comprises: decode means for

transferring the signal to be transferred converted by the conversion means to the phone main body by the transmission/reception means to decode-process the signal to be transferred as a pattern code signal.

5 16. The cellular phone according to claim 1, wherein the operation means comprises: optical mouse means; and conversion means for converting a distance information signal corresponding to movement of the operation means into a signal to be transferred, and

10 the phone main body comprises: means for transferring the signal to be transferred converted by the conversion means in the transmission/reception means and for decoding the signal as a distance information signal to perform an operation process of
15 the second display means.

17. A cellular phone comprising:

a voice communication section which carries out communication of information for the call including voice;

20 an information communication section which carries out the communication of the information other than the call information, including an image to be displayed;

a first display section which is disposed in a phone main body to display the information for the
25 call;

a second display section which enlarges and displays details of the information including the image

to be displayed;

an operation key which is attachable/detachable with respect to the phone main body and which inputs character or instruction information; and

5 a transmission/reception section which transmits/receives the character or instruction information between the operation key and the phone main body.

18. The cellular phone according to claim 17, wherein the second display section comprises a display
10 section surface rotatably disposed in an attaching section in the phone main body, and

the second display section is contained in the phone main body, when the operation key is attached to the phone main body, and the display part surface is
15 rotated to set the second display section in a state position in which the display is possible, when the operation key is detached from the phone main body.

19. The cellular phone according to claim 18, wherein the second display section comprises: a
20 projection display section disposed in the phone main body; and a magnification reflective mirror section which is rotatably disposed in the attaching section in the phone main body and which is capable of being set in a state opposite to the projection display section,
25 and

the magnification reflective mirror section is folded and contained in the phone main body, when the

operation key is attached to the phone main body, and the surface of the magnification reflective mirror section is set into a state position opposite to the projection display section, when the operation key is detached from the phone main body.

20. The cellular phone according to claim 18, wherein the second display section comprises: a display section; and a direct view type magnification optical section disposed opposite to the display section, the display section and magnification optical section are folded and contained in the phone main body, when the operation key is attached to the phone main body, and

a display surface of the display section and the surface of the magnification optical section are set in such a state position that the surfaces form a predetermined angle from the surface of the phone main body and the display is possible, when the operation key is detached from the phone main body.

21. The cellular phone according to claim 17, wherein the second display section comprises: a display section; and a direct view type magnification optical section disposed opposite to the display section, and the magnification optical section is contained in the phone main body, when the operation key is attached to the phone main body, and the magnification optical section is set in a display state position distant from

the display surface of the display section by a predetermined interval, when the operation key is detached from the phone main body.

22. The cellular phone according to claim 17,
5 wherein the phone main body has a first attaching position in which the operation key is attached onto a surface side of the phone main body, and a second attaching position in which the operation key is attached onto a rear surface side of the phone main
10 body in a detached state from the phone main body.

23. The cellular phone according to claim 22, wherein the operation key includes two horizontal cursor arrow direction keys, and

further comprises:
15 a rear surface attachment detection section which detects that the operation key has been attached to the second attaching position;

a code change section of a code allocation function of the two horizontal cursor arrow direction
20 keys of the operation key; and

a code allocation change section which changes the code allocation function by a signal of the rear surface attachment detection section to operate, when the operation key is attached to the second attaching
25 position.

24. The cellular phone according to claim 17, further comprising:

an attachment detection section which detects presence/absence of the attachment of the operation key with respect to the phone main body;

5 a key input section which associates and allocates input keys of the operation key with respect to a plurality of different function operations; and

an input key allocation change section which switches the allocation by the key input section to a function input key allocation from a text input key allocation by a signal of the attachment detection section.

10

25. The cellular phone according to claim 17, further comprising:

an attachment detection section which detects presence/absence of the attachment/detachment of the operation section with respect to the phone main body; and

15

a control section which switches display driving of the first and second display sections based on a signal of the attachment detection section.

20

26. The cellular phone according to claim 17, further comprising:

an attachment detection section which detects presence/absence of the attachment/detachment of the operation key with respect to the phone main body; and

25

a control section which starts or ends a communication procedure process of the information

communication section based on a signal of the attachment detection section.

27. The cellular phone according to claim 17, further comprising:

5 a text processing section which transfers character data key-inputted by the operation key to the phone main body from the operation key and subsequently converts the data to a text; and

 a sentence edition memory including both
10 a temporary memory in which only a part is recorded at a sentence input time and an all sentence memory in which all sentences are recorded,

 wherein the first display section displays the data of the temporary memory, and the second display
15 section simultaneously displays the data of the all sentence memory.

28. The cellular phone according to claim 17, wherein the transmission/reception section comprises:

 a reception level detection section which detects
20 an intensity of a signal transmitted from the operation key;

 a warning level setting section which indicates a predetermined critical radio wave intensity;

 a comparison section which compares an intensity
25 of an output signal from the reception level detection section with that of the output signal of the warning level setting section; and

a warning on generation section which issues
a warning, when the intensity of the output signal
from the reception level detection section is lower
than that of the output signal from the warning level
5 setting section in the comparison section.

29. The cellular phone according to claim 17,
wherein the operation key comprises: a capacitance
input section which performs an instruction operation
for the second display section on a rear surface side
10 of an operation surface; and an XY code conversion
section which converts a signal of the capacitance
input section into a signal to be transferred, and

the phone main body comprises: a control section
which transfers the signal to be transferred converted
15 by the XY code conversion section by the transmission/
reception section to perform an instruction operation
process of the second display section.

30. The cellular phone according to claim 17,
wherein the operation key comprises: a cross key
20 section which performs an instruction operation of
the second display section on a rear surface side of
an operation surface of the operation key; and an XY
code conversion section which converts a signal
outputted from the cross key section into a signal to
25 be transferred, and

the phone main body comprises: a control section
which transfers the signal to be transferred converted

by the XY code conversion section by the transmission/
reception section to perform an instruction operation
process of the second display section.

31. The cellular phone according to claim 17,
5 wherein the operation key comprises: a pattern code
reader section which reads a binary pattern code; and
a conversion section for data to be transferred which
converts read signal information read by the pattern
code reader section into a signal to be transferred,
10 and

the phone main body comprises: a barcode decode
section which transfers the signal to be transferred
converted by the conversion section for the data to be
transferred to the phone main body by the transmission/
15 reception section to decode-process the signal to be
transferred as a pattern code signal.

32. The cellular phone according to claim 17,
wherein the operation key comprises: an optical mouse
section; and a conversion section for data to be
20 transferred which converts a distance information
signal corresponding to movement of the operation key
into a signal to be transferred, and

the phone main body comprises: a control section
which transfers the signal to be transferred converted
25 by the conversion section for the data to be
transferred in the transmission/reception section and
which decodes the signal as a distance information

signal to perform an operation process of the second display section.